

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

1. (original) An air flow sensor comprising:
 - a temperature dependent resistor device;
 - a first circuit for applying a voltage to the temperature dependent resistor device until it reaches a first temperature, the first circuit including:
 - a first reference resistance leg,
 - a first variable resistance leg including the temperature dependent resistor device, and
 - a first comparator connected to both legs for determining when the temperature dependent resistor device reaches the first temperature;
 - a second circuit including:
 - a second reference resistance leg,
 - a second variable resistance leg including the temperature dependent resistor device, and
 - a second comparator connected to both legs for determining when the temperature dependent resistor device reaches a second temperature; and
 - a processor connected to both the first and second comparators and programmed to time the period of time it takes the temperature dependent resistor device to change from the first temperature to the second temperature to determine the heat loss rate of the temperature dependent resistor device.
2. (original) The air flow sensor of claim 1 in which the temperature dependent

resistor device is a thermistor.

3. (original) The air flow sensor of claim 1 in which the first variable resistance leg includes a low impedance resistor connected in series with the temperature dependent resistor device and the first reference resistance leg includes a plurality of resistors connected in series, the first reference resistance leg connected in parallel with the first variable resistance leg.

4. (original) The air flow sensor of claim 1 in which the second reference resistance leg includes a plurality of resistors connected in series and the second variable resistance leg includes a high impedance resistor connected in series with the temperature dependent resistor device, the second reference resistance leg connected in parallel with the second variable resistance leg.

5. (original) The air flow sensor of claim 1 further including a first switch connected between a voltage source and the first circuit, the processor programmed to close the first switch until the temperature dependent resistor device reaches the first temperature and to then open the first switch.

6. (original) The air flow sensor of claim 1 further including a second switch connected between a voltage source and the second circuit, the processor further programmed to close the second switch after the temperature dependent resistor device reaches the first temperature.

7. (original) The air flow sensor of claim 1 further including an ambient temperature sensing circuit including the temperature dependent resistor device.

8. (original) The air flow sensor of claim 7 in which the ambient temperature sensing circuit includes a reference resistor and a capacitor connected in series with the temperature dependent resistor device.

9. (original) The air flow sensor of claim 8 in which the processor is connected on a first line between the reference resistor and the capacitor and on a second line between the capacitor and the temperature dependent resistor device.

10. (original) The air flow sensor of claim 9 in which the processor is programmed to apply a voltage on the first line and to detect the voltage on the second line until it reaches a predetermined level and to then apply a voltage on the second line and to detect the voltage on the first line until it reaches the predetermined level.

11. (previously presented) An air flow sensor comprising:
a temperature dependent resistor device;
means for applying a voltage to the temperature dependent resistor device until it reaches a first temperature, including a first switch connected between a voltage source and a first circuit;
means for determining when the temperature dependent resistor device then cools to a second, lower temperature, including a second switch connected between a voltage source

and a second circuit; and

means for timing the period of time it takes the temperature dependent device to change from the first temperature to the second temperature to determine the heat loss rate of the temperature dependent resistor device.

12. (previously presented) The air flow sensor of claim 11 in which the means for applying a voltage includes a comparator connected to a first reference resistance leg and a first variable resistance leg including the temperature dependent resistor device, the comparator providing an output signal when the resistance of the temperature dependent resistor device causes the first circuit to balance.

13. (previously presented) The air flow sensor of claim 11 in which the means for determining includes a comparator connected to a second reference resistance leg and a second variable resistance leg including the temperature dependent resistor device, the comparator providing an output signal when the resistance of the temperature dependent resistor device causes the second circuit to balance.

14. (previously presented) A method of determining the heat transfer rate of a temperature dependent resistor device, the method comprising:

heating the temperature dependent resistor device to a first temperature by applying a first voltage across the temperature dependent resistor device until it reaches a first resistance value;

allowing the temperature dependent resistor device to cool to a second temperature by applying a second, lower voltage across the temperature dependent resistor

device until it reaches a second resistance value;

measuring the period of time it takes for the temperature dependent resistor device to cool to the second temperature including monitoring when the temperature dependent device reaches the first resistance value and timing the period it takes to reach the second resistance value; and

calculating the rate of heat transfer of the temperature dependent resistor device based on the measured period of time.

15. (cancelled)

16. (cancelled)

17. (cancelled)